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10/077,763	02/20/2002	Haixiang He	57983.000067	3467
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Thomas E. Anderson Hunton & Williams 1900 K Street, N.W. Washington, DC 20006-1109			PHILPOTT, JUSTIN M	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,763

Applicant(s)

HE, HAIXIANG

Examiner

Justin M. Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings (i.e., amended Figure 1) were received on February 22, 2006. These drawings are acceptable and overcome the objection in the previous office action.

Response to Arguments

2. Applicant's arguments filed February 22, 2006 have been fully considered but they are not persuasive.

Specifically, applicant argues (pages 8-10) that there is no motivation to modify Jain to multicast the single message to a group. However, as discussed in the following office action, Jain teaches multicasting the single message (e.g., "aggregated list of the multicast registration information") to a group address (e.g., address corresponding to intermediate device 204, which functions as an intermediary for communications between device 202/Internet 206 and VLANs 228 and 230, see col. 8, lines 39-51). While Jain may not specifically disclose that the address of the intermediate device 204 is a "group address", intermediate device 204 implicitly performs the function of a group address because it serves as the common address for both VLAN 228 and 230 to register with devices 202 and 204 as VLAN 500 (e.g., see col. 8, line 15 – col. 9, line 12). Alternatively, if the address of intermediate device 204 is not considered to be a group address, it is noted that the teachings of Jain are directed specifically towards multicasting (e.g., see abstract and col. 7, line 13 – col. 9, line 39 regarding "multicast" registration and packets), and multicasting to a group address is well known in the art of multicasting, and accordingly, it would have been

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obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since multicasting to a group address is well known in the art of multicasting. Still further, Jain also teaches that the database, which stores the “aggregate list of the multicast registration information” at intermediate device 204 (see col. 8, lines 15-23) may be implemented at a plurality of locations (see col. 8, lines 23-27) in addition to intermediate device. Thus, one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address. Thus, for this additional reason, in the alternate view if the address of intermediate device 204 is not considered to be a group address, at the time of the invention it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address. Thus, applicant’s argument is not persuasive.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,614,787 to Jain et al.

Regarding claim 1, Jain teaches a method for multicasting a plurality of receiver membership reports containing receiver information for a plurality of multicast source systems (e.g., see col. 2, line 34-65), the method comprising the steps of: collecting receiver information (e.g., see col. 7, lines 26-54 regarding receiving “multicast registration information”) for the plurality of multicast source systems (e.g., first and second VLANs, see col. 7, lines 26-54); aggregating the receiver information (e.g., “multicast registration information”) for each multicast source system (e.g., each VLAN) into a respective record (e.g., wherein “multicast registration information” is received from each of clients 206, 208, 210 and 212 in VLAN 228 and the information is aggregated by, or tagged with, a common “VLAN identification (VID)”, see col. 7, lines 29-43; the same is also performed in VLAN 230 wherein each of clients 216 and 218 provide “multicast registration information” for a respective record, see col. 7, lines 44-54); aggregating the plurality of respective records (e.g., aggregating each of the respective records of VLAN 228 and VLAN 230, see col. 7, line 55 – col. 8, line 38) into a single message (e.g., “an aggregated list of the multicast registration information” comprising “a new or virtual ID ... which represents the aggregation of the existing VIDs”, see col. 7, lines 55-67 and col. 8, lines 3-6) (e.g., see col. 7, line 55 – col. 8, line 38); and multicasting the single message (e.g., “aggregated list of the multicast registration information”) to a group address (e.g., address corresponding to intermediate device 204, which functions as an intermediary for

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communications between device 202/Internet 206 and VLANs 228 and 230, see col. 8, lines 39-51).

While Jain may not specifically disclose that the address of the intermediate device 204 is a “group address”, intermediate device 204 implicitly performs the function of a group address because it serves as the common address for both VLAN 228 and 230 to register with devices 202 and 204 as VLAN 500 (e.g., see col. 8, line 15 – col. 9, line 12). Alternatively, if the address of intermediate device 204 is not considered to be a group address, it is noted that the teachings of Jain are directed specifically towards multicasting (e.g., see abstract and col. 7, line 13 – col. 9, line 39 regarding “multicast” registration and packets), and Examiner takes official notice that multicasting to a group address is well known in the art of multicasting, and accordingly, it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since multicasting to a group address is well known in the art of multicasting. Still further, Jain also teaches that the database, which stores the “aggregate list of the multicast registration information” at intermediate device 204 (see col. 8, lines 15-23) may be implemented at a plurality of locations (see col. 8, lines 23-27) in addition to intermediate device. Thus, one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address. Thus, for this additional reason, in the alternate view if the address of intermediate device 204 is not considered to be a group address, at the time of the invention it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration

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information” to a group address since one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address.

Regarding claim 2, Jain teaches the step of aggregating receiver information (e.g., see col. 7, lines 26-54) further comprises the step of indexing each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 3, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 4, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 5, Jain teaches the group record comprises one of Transmit and Hold (e.g., see col. 8, lines 15-38 and col. 11, lines 34-55 regarding tagged or untagged).

Regarding claim 6, Jain teaches the step of accessing a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs); and enabling each multicast source system (e.g., VLAN) to respond (e.g., register with intermediate device, see col. 8, lines 39-51) based upon the receiver information in each corresponding respective record (e.g., “multicast registration information”).

Regarding claim 7, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol).

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Alternatively, if such a protocol is not considered to be a multicast source notification of interest protocol, applicant has admitted that the multicast source notification of interest protocol is well known in the art for group map messaging or IGMP (e.g., see applicant's specification at page 1, line 11 to page 2, line 19), and thus, implementing the invention of Jain with a multicast source notification of interest protocol would have been obvious at the time of the invention since applicant admits that such an implementation is well known in the art.

Regarding claim 8, Jain teaches a computer process performs the method discussed above regarding claim 1 (e.g., see col. 4, line 55 – col. 5, line 53 regarding computer system operations) via a computing system (e.g., computer system) operating an encoded computer program of instructions (e.g., see col. 5, lines 5-7 regarding computer readable media and col. 6, lines 63-66 regarding computer executable instructions), implicitly comprising a computer signal embodied in a carrier wave as is known in the art (e.g., see col. 4, lines 5-53).

Regarding claim 9, Jain teaches a system for performing the method discussed above regarding claim 1, wherein the system comprises a plurality of multicast source systems (e.g., first and second VLANs 228 and 230, respectively) for receiving information for (e.g., see col. 2, line 34-65), a router (e.g., intermediate device 202 and/or 204) for collecting receiver information (e.g., "multicast registration information") for the plurality of multicast source systems (e.g., VLAN 228 and 230) (e.g., see col. 7, lines 26-54); aggregating the receiver information (e.g., "multicast registration information") for each multicast source system (e.g., each of VLAN 228 and 230) into a respective record (e.g., wherein "multicast registration information" is received from each of clients 206, 208, 210 and 212 in VLAN 228 and the information is aggregated by, or tagged with, a common "VLAN identification (VID)", see col.

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7, lines 29-43; the same is also performed in VLAN 230 wherein each of clients 216 and 218 provide “multicast registration information” for a respective record, see col. 7, lines 44-54); aggregating the plurality of respective records (e.g., aggregating each of the respective records of VLAN 228 and VLAN 230, see col. 7, line 55 – col. 8, line 38) into a single message (e.g., “an aggregated list of the multicast registration information” comprising “a new or virtual ID ... which represents the aggregation of the existing VIDs”, see col. 7, lines 55-67 and col. 8, lines 3-6) (e.g., see col. 7, line 55 – col. 8, line 38); and multicasting the single message (e.g., “aggregated list of the multicast registration information”) to a group address (e.g., address corresponding to intermediate device 204, which functions as an intermediary for communications between device 202/Internet 206 and VLANs 228 and 230, see col. 8, lines 39-51).

While Jain may not specifically disclose that the address of the intermediate device 204 is a “group address”, intermediate device 204 implicitly performs the function of a group address because it serves as the common address for both VLAN 228 and 230 to register with devices 202 and 204 as VLAN 500 (e.g., see col. 8, line 15 – col. 9, line 12). Alternatively, if the address of intermediate device 204 is not considered to be a group address, it is noted that the teachings of Jain are directed specifically towards multicasting (e.g., see abstract and col. 7, line 13 – col. 9, line 39 regarding “multicast” registration and packets), and Examiner takes official notice that multicasting to a group address is well known in the art of multicasting, and accordingly, it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since multicasting to a group address is well known in the art of multicasting. Still further, Jain also teaches that the database, which

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stores the “aggregate list of the multicast registration information” at intermediate device 204 (see col. 8, lines 15-23) may be implemented at a plurality of locations (see col. 8, lines 23-27) in addition to intermediate device. Thus, one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address. Thus, for this additional reason, in the alternate view if the address of intermediate device 204 is not considered to be a group address, at the time of the invention it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address.

Regarding claim 10, Jain teaches the router (e.g., intermediate device 202) indexes each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 11, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 12, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 13, Jain teaches each multicast source system (e.g., VLAN) accesses a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs) and responds (e.g., registers with intermediate device, see col. 8, lines 39-51) based upon the receiver information in each corresponding respective record (e.g., multicast registration information).

Regarding claim 14, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol). Alternatively, if such a protocol is not considered to be a multicast source notification of interest protocol, applicant has admitted that the multicast source notification of interest protocol is well known in the art for group map messaging or IGMP (e.g., see applicant's specification at page 1, line 11 to page 2, line 19), and thus, implementing the invention of Jain with a multicast source notification of interest protocol would have been obvious at the time of the invention since applicant admits that such an implementation is well known in the art.

Regarding claim 15, Jain teaches a method discussed above regarding claim 1 wherein the method is performed by an article of manufacture comprising: at least one processor-readable carrier (e.g., see col. 4, lines 5-53); and instructions carried on the at least one carrier (e.g., see col. 5, lines 5-7 regarding computer readable media and col. 6, lines 63-66 regarding computer executable instructions); wherein the instructions are configured to be readable from the least one carrier by at least one processor (e.g., see col. 4, line 55 – col. 5, line 53 regarding computer system operations) and thereby cause the at least one processor to operate so as to: collect receiver information (e.g., see col. 7, lines 26-54 regarding receiving "multicast registration information") for the plurality of multicast source systems (e.g., first and second

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VLANs, see col. 7, lines 26-54); aggregate the receiver information (e.g., “multicast registration information”) for each multicast source system (e.g., each VLAN) into a respective record (e.g., wherein “multicast registration information” is received from each of clients 206, 208, 210 and 212 in VLAN 228 and the information is aggregated by, or tagged with, a common “VLAN identification (VID)”, see col. 7, lines 29-43; the same is also performed in VLAN 230 wherein each of clients 216 and 218 provide “multicast registration information” for a respective record, see col. 7, lines 44-54); aggregate the plurality of respective records (e.g., aggregating each of the respective records of VLAN 228 and VLAN 230, see col. 7, line 55 – col. 8, line 38) into a single message (e.g., “an aggregated list of the multicast registration information” comprising “a new or virtual ID ... which represents the aggregation of the existing VIDs”, see col. 7, lines 55-67 and col. 8, lines 3-6) (e.g., see col. 7, line 55 – col. 8, line 38); and multicast the single message (e.g., “aggregated list of the multicast registration information”) to a group address (e.g., address corresponding to intermediate device 204, which functions as an intermediary for communications between device 202/Internet 206 and VLANs 228 and 230, see col. 8, lines 39-51).

While Jain may not specifically disclose that the address of the intermediate device 204 is a “group address”, intermediate device 204 implicitly performs the function of a group address because it serves as the common address for both VLAN 228 and 230 to register with devices 202 and 204 as VLAN 500 (e.g., see col. 8, line 15 – col. 9, line 12). Alternatively, if the address of intermediate device 204 is not considered to be a group address, it is noted that the teachings of Jain are directed specifically towards multicasting (e.g., see abstract and col. 7, line 13 – col. 9, line 39 regarding “multicast” registration and packets), and Examiner takes official notice that

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multicasting to a group address is well known in the art of multicasting, and accordingly, it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since multicasting to a group address is well known in the art of multicasting. Still further, Jain also teaches that the database, which stores the “aggregate list of the multicast registration information” at intermediate device 204 (see col. 8, lines 15-23) may be implemented at a plurality of locations (see col. 8, lines 23-27) in addition to intermediate device. Thus, one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address. Thus, for this additional reason, in the alternate view if the address of intermediate device 204 is not considered to be a group address, at the time of the invention it would have been obvious to one of ordinary skill in the art to multicast the “aggregate list of the multicast registration information” to a group address since one of ordinary skill in the art would readily recognize that in a multicasting system having the same information (e.g., “aggregate list of the multicast registration information”) stored at a plurality of locations, the information may be most efficiently distributed to each location via multicasting to a group address.

Regarding claim 16, Jain teaches the at least one processor is further caused to operate so as to index each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 17, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 18, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 19, Jain teaches the at least one processor is further caused to operate so as to access a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs); and enable each multicast source system (e.g., VLAN) to respond (e.g., register with intermediate device, see col. 8, lines 39-51) based upon the receiver information in each corresponding respective record (e.g., multicast registration information).

Regarding claim 20, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol). Alternatively, if such a protocol is not considered to be a multicast source notification of interest protocol, applicant has admitted that the multicast source notification of interest protocol is well known in the art for group map messaging or IGMP (e.g., see applicant's specification at page 1, line 11 to page 2, line 19), and thus, implementing the invention of Jain with a multicast source notification of interest protocol would have been obvious at the time of the invention since applicant admits that such an implementation is well known in the art.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

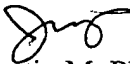
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571.272.3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin M. Philpott


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